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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,691	09/30/2004	Chad Rue	FIS920040175US1	5690

29371 7590 01/26/2007  
CANTOR COLBURN LLP - IBM FISHKILL  
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BLOOMFIELD, CT 06002

EXAMINER
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VANORE, DAVID A

ART UNIT	PAPER NUMBER
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2881

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/26/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/711,691

Applicant(s)

RUE ET AL.

Examiner

David A. Vanore

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

ated (PTO-892)  
s Patent Drawing Review (PTO-948)  
Statement(s) (PTO/SB/08)  
e \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. Applicant's arguments filed November 16, 2006 have been fully considered but they are not persuasive.
2. Applicant has amended claim 1 to recite that which was previously contained in claim 4, and argues that this limitation is not contained in the Motoi reference, or the other prior art. Attention is drawn to Item 7A of Motoi which is a temperature control means, external to the FIB tool vacuum chamber. When the embodiment set forth in Motoi as including a Peltier element as a thermoelectric temperature control means is located in the FIB chamber, Item 7A controls this element necessarily by applying a current thereto as a thermoelectric temperature control means operates by having such a current applied thereto. It is therefore an inherent feature that some means of sealed and secured electrical connection penetrating the vacuum FIB chamber be present to couple the Peltier element of Motoi to the controller 7A of Motoi to effect temperature control, else the temperature control means of Motoi would not be controllable by controller 7A. The limitation argued and added to claim 1 is therefore contained in the prior art.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Motoi et al. (US 2004/0262516).

5. Regarding claim 1, '2516 teaches an apparatus for manipulating the temperature of a sample used in focused ion beam processing comprising a base member (Fig. 2, #8), a thermoelectric module disposed over the base member (#10), and a sample (#1) mounted on a mounting surface of the thermoelectric module wherein the thermoelectric module is configured so as to reduce the temperature of said sample with respect to an ambient FIB tool temperature (Paragraph 0065).

6. Regarding claims 2, '2516 teaches the thermoelectric module comprises a Peltier device (Paragraph 0067).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3-7 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Motoi et al. (US 2004/0262516), in view of Richardson (US 6,751,516), further in view of Suzuki (US 4,555,626).

9. Regarding claim 3, the above-mentioned prior art meets all claim limitations with the exception of the thermoelectric module is configured to draw heat from the sample and exhaust the heat through the base member. '626 teaches that the thermoelectric

Art Unit: 2881

module is configured to draw heat from the sample and exhaust the heat through the base member (Col. 3, ll. 50-55 and Fig. 1). It would have been obvious to one skilled in the art at the time of the invention to draw and exhaust the heat this way because the base member is cooled by convection or conduction.

10. Regarding claim 5, '626 teaches a thermal ballast module mounted on the base member (Fig. 1, #10).

11. Regarding claims 6 and 7, '626 teaches the claimed invention except for the thermal ballast being adjacent to, or mounted beneath, the thermoelectric module. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to make the thermal ballast adjacent to or mounted beneath the thermoelectric module since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

12. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motoi et al. (US 2004/0262516), in view of Richardson (US 6,751,516), further in view of Suzuki (US 4,555,626), further in view of Harrison et al. (US 2002/0162339).

13. Regarding claim 8, the aforementioned prior art meets all claim limitations with the exception of the construction of the thermal ballast. '339 teaches a thermal ballast comprising a sealed hollow vessel and a plurality of internal fins configured for facilitating heat transfer from the base member to an internal ballast material (Paragraphs 0043, 0044, 0053 and 0054, and Fig. 2, #14 and #11). Although '339 does not explicitly disclose that the ballast vessel and fins are made of high thermal conductive and high heat capacity material, it would be obvious to one of ordinary skill

Art Unit: 2881

in the art to fabricate these elements out of heat conductive and capacitive materials to make a more efficient thermal ballast that rapidly removes heat from the sample.

14. Regarding claim 9, '339 teaches a plurality of cooling ports within the base member for receiving a cooling medium circulated there through supplied by a cooling supply line (Paragraph 0065, 0066 and Fig. 3).

15. Regarding claim 10, '339 teaches that the cooling supply line is coupled to a cooling medium connector disposed through insulation (Paragraph 0053).

### ***Conclusion***


16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A. Vanore whose telephone number is (571) 272-2483. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
David A Vanore  
Primary Examiner  
Art Unit 2881

dav